

**ABSTRACT OF THE DISCLOSURE**

A method is disclosed for operating a synchronous space division multiple access, code division multiple access communications system. The method includes steps of, within a coverage area of a base station (BS), (a) assigning the same spreading code to a plurality of subscriber stations (SSs); and (b) beamforming using an antenna array at the BS so as to maximize the signal to interference plus noise ratio for a signal transmitted from a desired SS. The beamforming operates to steer a null towards another same-code SS to minimize interference from the same-code SS. Assuming that the antenna array has M-elements ( $M > 1$ ), then individual ones of P orthogonal spreading codes can be reused  $\alpha M$  times within the coverage area, where  $1/M < \alpha \leq 1$ . The step of beamforming includes an initial step of despreading the signal received from the desired SS, followed by a step of spatial filtering.